

# Risk and Management of a Perforation Complicating an Endoscopic Resection of Superficial Gastric Cancer and Adenoma

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**Abstract:**Background and aims: An endoscopic mucosal resection(EMR) and endoscopic submucosal dissection(ESD) are standard treatments for superficial gastric neoplasms. However, a perforation is the major complication in these treatments. The objective of this study was to assess the risk and management of perforations associated EMRs and ESDs. Patients and methods: A total of 347 patients diagnosed with superficial gastric epithelial neoplasms (350 cancers and 54 adenomas) who underwent an EMR or ESD from 1999 to 2008 were included in this study. The risk and management of gastric perforation during an endoscopic resection was retrospectively investigated. The perforation rate was evaluated divided during the first(1999–2002), second(2003–2005) and third(2006–2008) periods. The clinical outcome after perforation was assessed between the surgical group and the nonsurgical group. Results: The overall incidence of gastric perforation due to an endoscopic resection was 3.5%. The perforation rate was higher with ESD than with EMR (5.1% vs. 0%,  $p < 0.05$ ). In ESD, the perforation rate was significantly decreased in the third period in comparison to the second period (3.3% vs. 10.4%,  $p < 0.05$ ). Hospital days after the occurrence of gastric perforation were significantly lower in the nonsurgical group in comparison to the surgical group (10.7 days vs. 17.8 days,  $p < 0.05$ ). Conclusions: An ESD as well as an EMR are effective and safe treatments for superficial gastric neoplasms, although there is a minimal risk of perforation. Even if a perforation develops, nonsurgical management should still be considered.

**Key words:** Gastric cancer, Gastric adenoma, Endoscopic submucosal dissection, Endoscopic mucosal resection, Perforation, Complication